

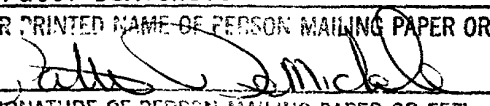
FORM PTO-1390 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NO. PHO 98,633
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		U.S. Application No. If known, see 37 CFR 1.5) 09/509131
INTERNATIONAL APPLICATION NO. PCT/EB99/05521	INTERNATIONAL FILING DATE July 29, 1999	PRIORITY DATE CLAIMED August 4, 1998
TITLE OF INVENTION DEVICE FOR THE PLAYBACK OF A RECORDED SIGNAL WITH POSITIONING MEANS		
APPLICANT(S) FOR DO/EO/US JOHANNES SCHRAMMEL		
Applicant(s) herewith submit to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</p> <p>4. <input type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c)(2))</p> <p>a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</p> <p>b. <input type="checkbox"/> has been transmitted by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2))</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</p> <p>b. <input type="checkbox"/> have been transmitted by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input checked="" type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> A translation of the amendment to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11. to 16. Below concern document(s) or information included:</p> <p>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98.</p> <p>12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included.</p> <p>13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.</p> <p><input type="checkbox"/> A SECOND OR SUBSEQUENT preliminary amendment.</p> <p>14. <input type="checkbox"/> A substitute specification.</p> <p>15. <input checked="" type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>16. <input checked="" type="checkbox"/> Other items or information:</p> <p>Priority Document No. 98890224.3</p> <p>2 Sheets of formal drawing</p> <p>Authorization under 37 CFR 1.136 (a) (3)</p>		

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--WHAT IS CLAIMED IS:--

[illegible]

IN THE ABSTRACT

Before line 1, delete "ABSTRACT:" and substitute the following as a centered heading:

--ABSTRACT OF THE DISCLOSURE--;

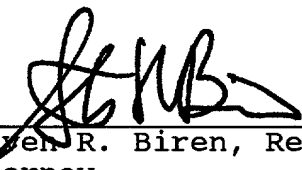
line 15, delete "(Fig.1)".

REMARKS

The Abstract and Specification have been amended to add headings in accordance with MPEP Section 601 and place the instant application in standard U.S. format.

Entry of this amendment prior to calculating the filing fee is respectfully requested.

Respectfully submitted,

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April 3, 2000

006044-040300

Device for the playback of a recorded signal with positioning means.

The invention relates to a device with playback means for reproducing a recorded signal recorded on a recording medium starting from a recording medium starting position of the recording medium and starting from a recording start moment by means of at least one playback head, and with positioning means for positioning said at least one playback head into a desired recording medium position for reproducing a recorded signal starting from this recording medium position.

Such a device of the kind mentioned in the opening paragraph is known from the document US 5,661,847 A and is formed by a video recorder. The known video recorder is capable of recording a recording signal of one or several broadcasts starting from a recording medium start position of a magnetic tape and starting from a recording start moment on sloping recording tracks of the magnetic tape in a recording mode. The recording medium start position here defines the position on the magnetic tape from which the recording signal is recorded, while the recording start moment is the actual time at which the recording of the signal to be recorded starts.

The known video recorder comprises an index signal generator for registering an index signal in a linear recording track of the magnetic tape at the start of each broadcast of a recording session. An index signal is formed by a so-called VISS signal (Video Index Search System). A VPS detector (Video Program System) is designed for detecting a VPS signal which belongs to and characterizes each broadcast. Whenever the VPS detector detects a change in the VPS signal, indicating the start of a new broadcast, it is capable of providing a control signal to the index signal generator for generating and recording a VISS signal.

The known video recorder further comprises playback means which comprise two magnet heads which are fastened to a head disc of a scanner and which can be driven into rotation, forming playback heads in a playback mode of the video recorder, and by means of which recorded signals laid down on the magnetic tape can be reproduced.

The known video recorder further comprises positioning means which include a remote control and a magnetic tape drive device. An index search signal can be supplied to the video recorder from the remote control in a playback mode of the video recorder for the

purpose of positioning the magnet heads into a desired recording medium position where the recorded signal of a broadcast starts. Such an index search signal may comprise, for example, an information to the effect that, starting from the present recording medium position, the third broadcast recorded on the magnetic tape in the direction of the end of the magnetic tape is to be reproduced. When this index search signal is received by the known video recorder, the magnetic tape transport device drives the magnetic tape in the direction of the end of the magnetic tape with a speed which is a multiple of the playback speed until an index signal is detected for the third time, which is the case when the desired recording medium position is reached, whereupon a recorded signal is reproduced by the playback means at normal playback speed. This procedure is known as index search mode. The magnet heads can thus be quickly positioned into a desired recording medium position at the start of a recorded broadcast.

It was found with the known video recorder, however, that the recording medium position into which the magnet heads are positioned by the positioning means depends on the actual recording medium position the moment an index search signal is received. For example, if recorded signals of seven broadcasts were recorded on a magnetic tape, the start of each broadcast being characterized by an index signal, and the index search signal for the positioning of the magnet heads at the start of the third broadcast towards the tape end is given by the remote control, it is possible that the positioning means set the magnet heads in a recording medium position where the third, fourth, fifth, sixth, or seventh recorded broadcast starts.

If the actual recording medium position upon the reception of the index search signal is such, for example, that an immediate reproduction of a recorded signal of the second broadcast recorded on the magnetic tape, as counted from the start of the magnetic tape, would be possible, then the magnetic tape drive device would drive the magnetic tape, when the index search signal is given, such that a recorded signal of the fifth broadcast recorded on the magnetic tape would be reproduced by the playback means.

On the other hand, if the actual recording medium position were such that a reproduction of a recorded signal of the fourth broadcast recorded on the magnetic tape, as counted from the beginning of the magnetic tape, would be possible, then the magnetic tape drive device would drive the magnetic tape, when the index search signal is given, such that the playback means would reproduce a recorded signal of the seventh broadcast recorded on the magnetic tape. The known video recorder thus has the disadvantage that a positioning of

the magnet heads into a desired recording medium position is possible only while taking into account their actual present position on the recording medium.

A further disadvantage found in the known video recorder was that the magnet heads can only be positioned by means of an index search signal into those recording medium positions where index signals are recorded. A fast finding of a recording medium position where a recorded signal of, for example, the third recorded broadcast is recorded which lies 15 minutes after the start of this third broadcast is not possible with the known video recorder.

The invention has for its object to eliminate the difficulties described above and to provide an improved device of the kind defined in the opening paragraph. This object is achieved in a device of the kind defined in the opening paragraph in that input means are provided for supplying a playback time information which characterizes a desired playback moment, said desired playback moment corresponding to the sum of a starting time information characterizing the recording start moment and a recording duration which has already elapsed in the recording of the recording signal in the desired recording medium position of the recording medium, and in that the positioning means are designed for subtracting the starting time information from the supplied playback time information when determining the desired recording medium position. It is advantageously possible in the device according to claim 1 for the magnet heads to be positioned into any recording medium positions as required, independently of the present recording medium position, through the input of a starting time information and a playback time information, and subsequently for recorded signals to be reproduced starting from said desired recording medium position. To achieve this, a programmed time period determined by the positioning means through subtraction of the starting time information from the playback time information can be compared with an actual playback duration determined, for example, by a tape counter, which characterizes the present recording medium position of, for example, a magnetic tape. The positioning means are designed for subsequently rotating the magnetic tape with a multiple of the playback speed until the desired recording medium position is reached, whereupon, provided the recording medium start position was registered at the start of the magnetic tape, the determined programmed time period will correspond to the determined actual playback time period.

It was found to be advantageous in a device according to claim 1 to provide the measures as defined in claim 2. This provides the advantage that a starting time information can be determined from the reproduced recorded signal by the device according to the

invention and need not be put in by the user of the device for characterizing a recording start moment of the recorded signal.

It was found to be advantageous in a device according to claim 1 to provide the measures as defined in claim 3. This leads to the advantage that the device according to the invention is also capable of recording signals. In addition, memory means, for example formed by an EEPROM provided in a video recorder, are designed for storing a starting time information which characterizes a recording start moment, whereby in addition the advantages contained in a device according to claim 2 are obtained.

It was found to be advantageous in a device according to claim 3 to provide the measures as defined in claim 4. This leads to the advantage that a starting time information can be stored on a magnetic tape in accordance with the VASS standard, and that on the one hand no separate memory means need be provided while on the other hand the starting time information can also be displayed by a different device according to the invention.

It was found to be advantageous in a device according to claim 3 to provide the measures as defined in claim 5. As a result of this, the advantages indicated for a device according to claim 4 are obtained in a digital video recorder which is designed for recording signals in accordance with the DVHS standard (Victor Company of Japan, no. 07015 of 25 July 1996).

It was found to be advantageous in a device according to claim 3 to provide the measures as defined in claim 6. This leads to the advantage that a stored recording date information can be reproduced by the device according to the invention and can be shown, for example, on a display of this device. It can thus be observed by a user of the device when a recorded signal was recorded.

It was found to be advantageous in a device according to claim 3 to provide the measures as defined in claim 7. This leads to the advantage that a stored broadcasting station identifier information can be reproduced by the device according to the invention and can be shown, for example, on a display of this device. It can thus be observed by a user of the device from which broadcasting station a signal was received and was recorded as a recorded signal.

It was found to be advantageous in a device according to claim 3 to provide the measures as defined in claim 8. As a result of this, on the one hand the input or storage of a starting time information characterizing a recording medium start position need not be carried out, and on the other hand a desired recording medium position can be determined in a particularly simple manner.

It was found to be advantageous in a device according to claim 1 to provide the measures as defined in claim 9. This leads to the advantage that a user can input a show view code, for example published in a program magazine and formed by a number code, characterizing the recording date, the starting time, and the broadcasting station of a broadcast to be recorded, for the purpose of reproducing a recorded broadcast which was characterized by its show view code.

It was found to be advantageous in a device according to claim 1 to provide the measures defined in claim 10. This leads to the advantage that, if recorded signals were registered on a recording medium on at least two different days, recording medium positions characterized by the same playback time information can be distinguished by their different recording dates.

The invention will now be explained in more detail with reference to an embodiment shown in the Figures, but the invention is by no means limited to this embodiment.

Fig. 1 shows a video recorder with input means for supplying a playback time information, with positioning means for positioning magnet heads of the video recorder in a desired recording medium position characterized by the supplied playback time information, and with playback means for reproducing a recorded signal present on a magnetic tape starting from the desired recording medium position.

Fig. 2 shows an excerpt from a program magazine in which broadcasts recorded on the magnetic tape complete with their starting times and show view codes are listed.

Fig. 3 diagrammatically shows recording ranges and recording medium positions on a magnetic tape from the start to the end of the magnetic tape, wherein it is indicated for each recording range of the magnetic tape to which broadcast a recorded signal present on the magnetic tape belongs.

Fig. 4 diagrammatically shows time periods and moments on a magnetic tape, wherein it is indicated for each time period on the magnetic tape to which broadcast a recorded signal present on the magnetic tape belongs.

Fig. 1 shows a video recorder 1 which forms a device according to the invention for recording and reproducing signals. An input signal ES can be supplied to the video recorder 1 at an input terminal 2, and a recorded signal VWAS, processed and reproduced, can be supplied to an output terminal 3.

The video recorder 1 comprises reception means 4 connected to the input terminal 2 and formed by a tuner, designed for receiving an input signal ES. The reception means 4 are tunable in a manner not shown in any detail in Fig. 1 so as to receive an input signal ES from a certain broadcasting station. Picture and sound information of consecutive broadcasts S are transmitted in an input signal ES, and a broadcasting station identifier information SKI is transmitted in scanning gaps of the input signal ES, so as to characterize a broadcasting station which broadcasts the input signal ES.

The video recorder 1 comprises recording means 6 which are designed for recording an input signal ES as a recorded signal AS on a recording medium in accordance with the VHS standard in a shortplay recording mode and a longplay recording mode. The recording medium is here formed by a magnetic tape 5. In the longplay recording mode, the video recorder 1 is capable of recording a recording signal AS on a E300 video cassette for a recording time of up to ten hours. The actual moment from which a signal AS to be recorded is recorded by the video recorder 1 during a recording session is denoted the recording start moment T1 hereinafter, and the actual recording medium position starting from which the signal AS is recorded on the magnetic tape 5 is denoted the recording medium start position P1 hereinafter. The recording means 6 are designed for recording a starting time information BZI which characterizes the recording start moment T1 of the recording signal AS, a recording date information ADI, and a broadcasting station identifier information SKI in accordance with the VASS standard (Video Address Search System) on the magnetic tape 5, as will be discussed in more detail below.

The video recorder 1 further comprises playback means which in the present case correspond at least substantially to the recording means 6 and which are designed for reproducing a recorded signal AS recorded on the magnetic tape 5 starting from the recording medium start position P1 of the magnetic tape and from the recording start moment T1 by means of a magnet head 7 and a magnet head 8, which will be discussed in more detail below. The magnet heads 7 and 8 are fastened to a head disc 9 of a scanner 10 and can thus be driven into rotation. The magnetic tape 5 is passed along the head disc 9 by means of tape guides 11, 12, 13, and 14. A capstan 15 can be driven by a motor 16 via a first operational link 17 such that the magnetic tape 5 can be pressed against the capstan 15 by a pressure roller 16 so as to convert a rotary movement of the capstan 15 into a longitudinal movement of the magnetic tape 5 in a direction R. The magnetic tape 5 can also be transported in a direction opposed to the direction R by means of a further motor which is not shown in Fig. 1, as is general practice

in video recorders. It is to be noted that the motor 16 may alternatively be designed for driving the magnetic tape 5 in a direction opposed to the direction R.

The video recorder 1 comprises signal processing means 19 to which an input signal ES supplied by the reception means 4 can be fed and which are designed for processing the received signal ES and for supplying a recording signal AS. In a recording mode of the video recorder 1, a recording signal AS can be supplied to the magnet heads 7 and 8 via a second operational link 20 for the purpose of recording the signal AS in sloping recording tracks on the magnetic tape 5. In a playback mode of the video recorder 1, a recorded signal WAS obtained from sloping recording tracks of the magnetic tape 5 can be supplied to the signal processing means 19 by means of the magnet heads 7 and 8. Signals AS recorded in the shortplay recording mode can here be reproduced in a shortplay playback mode, and signals AS recorded in the longplay recording mode can be reproduced in a longplay playback mode. A recorded signal VWAS, reproduced and processed by the signal processing means 19, can be supplied at the output terminal 3 of the video recorder.

The video recorder 1 further comprises a control unit 21 to which a broadcasting station identifier information SKI determined from an input signal ES by the signal processing means 19 can be supplied. The video recorder 1 further comprises a clock component 22 which is designed for supplying a time information ZI, which indicates the actual time, and a date information DI, which indicates the actual date. The time information ZI and date information DI can be initialized by a user of the video recorder 1 in a manner which is not shown in any detail in Fig. 1. A time information ZI and a date information DI can be supplied by the clock component 22 to the control unit 21.

When a recording mode has been activated in the video recorder 1, the control unit 21 is prepared for registering the time information ZI most recently supplied to said control unit as a starting time information BZI characterizing the recording medium start position T1 of the recording and for registering the date information DI supplied most recently to this control unit as the recording date information ADI of the recording. The control unit 21, in the activated recording mode, is designed for supplying the starting time information BZI, the recording date information ADI, and the broadcasting station identifier information SKI to a stationary magnet head 23. Throughout a recording session, the starting time information BZI, the recording date information ADI, and the broadcasting station identifier information SKI of the recording can be recorded in a linear recording track of the magnetic tape 5 in accordance with the VASS standard by the stationary magnet head 23. In the playback mode of the video recorder 1, data recorded in accordance with the VASS standard in the linear

recording track of the magnetic tape 5 can be supplied to the control unit 21. The control unit 21 and the stationary magnet head 23 form detection means 25 in the playback mode of the video recorder 1 for detecting information contained in a reproduced recorded signal, which here is reproduced by the stationary magnet head 23. The control unit 21 is designed for supplying the data it receives to a display 24. The display 24 is capable of showing a time information ZI, a date information DI, a starting time information BZI, a recording date information ADI, and a broadcasting station identifier information SKI.

The video recorder 1 further comprises a tape length counter 26 which is designed for determining an actual recording medium position AP and an actual playback time period WD in a manner not shown in any detail in Fig. 1. The actual recording medium position AP indicates in which position of the magnetic tape 5, measured from the start of the magnetic tape 5, the magnetic heads 7 and 8 are positioned. The actual playback time period WD indicates the time period which a playback of a signal AS recorded on the magnetic tape 5 would occupy starting from the beginning of the magnetic tape 5 up to the present recording medium position AP at a normal playback speed. The actual playback time period WD is also known as "Time Used". The actual recording medium position AP and the actual playback time period WD are determined by the tape length counter 26 in accordance with the playback mode activated, i.e. for the shortplay mode or the longplay mode. Such a tape length counter 26 is known, for example, from the document WO 96/12283 A1. An actual recording medium position AP determined by the tape length counter 26 and an actual playback time period WD determined by the tape length counter 26 can be supplied to the control unit 21.

The video recorder 1 comprises positioning means 27 formed by the control unit 21, the motor 16, the further motor mentioned above, the capstan 15, the pressure roller 18, and the tape length counter 26, which means are designed for positioning the two magnet heads 7 and 8 into a desired recording medium position GP for playback purposes of a recording signal AS, starting from the desired recording medium position GP. For this purpose, motor control data MSI can be supplied by the control unit 21 to the motor 16 and the further motor for transporting the magnetic tape 5 so as to position the magnet heads 7 and 8. The positioning means 27 are here constructed such that they can position the magnet heads 7 and 8 into any desired recording medium position GP of the magnetic tape 5 at a speed which is a multiple of the playback speed.

The video recorder 1 further comprises a remote control receiver 28. The remote control receiver 28 and a portion of the control unit 21 together with a remote control device 29 constitute input means 30. The remote control device 29 is constructed for

transmitting infrared signals to the remote control receiver 28. The remote control device 29 comprises a record button 31 with which a shortplay and a longplay recording mode can be activated in the video recorder 1. The remote control device 29 further comprises a playback button 32 with which a playback mode can be activated, such that a shortplay or a longplay mode is activated in dependence on recorded signals AS present on the magnetic tape 5.

The remote control device 29 in addition comprises buttons, represented by a playback moment button 33, by means of which the input of a playback time information WZI is rendered possible, characterizing a desired playback moment GT. The desired playback moment GT here corresponds to the sum of a starting time information BZI which characterizes the recording start moment T1 and a recording time VD which has already elapsed in the recording of the signal AS in the desired recording medium position GT of the magnetic tape 5. A playback time information WZI put in by means of the playback moment button 33 can be supplied to the remote control receiver 28, and from there to the control unit 21, in the form of an infrared signal. The control unit 21 of the positioning means 27 is designed for subtracting the starting time information BZI from the supplied playback time information WZI in the determination of the desired recording medium position GP, which will be discussed in more detail further below.

The operation of the video recorder 1 will now be explained in more detail with reference to a first embodiment and Fig. 2, Fig. 3, and Fig. 4. Fig. 2 shows part of a page from a program magazine 34 of 12 August 1998. This page of the program magazine 34 shows starting times, show view codes, and titles of programs broadcast by the station ORF1 in the form of an input signal ES coming from this broadcasting station ORF1 on 12 August 1998. It is indicated here, for example, that a program entitled "Side Glances" starts at 12:30 hours. The show view code "17345" here forms a numerical code in which the date information DI representing the date "12.08.98", the time information ZI indicating the starting time "12:30", and the broadcasting station identifier SKI "ORF1" is contained in encoded form. A show view code is used in video recorders for programming the recording of a broadcast which is shifted in time.

It is assumed in this first example that a user of the video recorder 1 operates the record button 31 for recording the input signal ES of the broadcasting station ORF1 at 13:00 hours and activates the longplay recording mode in the video recorder 1. It is further assumed that the longplay recording mode of the video recorder 1 is not deactivated until after a recording duration of ten hours, at 23:00 hours, and that recording signals AS from the broadcasts S1 to S11 are recorded on the magnetic tape 5.

Fig. 3 diagrammatically shows recording ranges and recording medium positions P on the magnetic tape 5 starting from the beginning of the magnetic tape 5 at a recording medium position P1 up to the end of the magnetic tape 5 at a recording medium position P12. It is indicated for each recording range of the magnetic tape 5 which broadcast S belongs to a recording signal AS recorded on the magnetic tape 5. For example, the broadcast S1 – News from 13:00 to 13:20 hours – is recorded on the magnetic tape 5 from the position P1 up to a position P2. The recording medium positions P1 to P11 characterize positions on the magnetic tape 5 starting from which recording signals AS of the broadcasts S1 to S11 are recorded.

Fig. 4 diagrammatically shows time ranges and moments T on the magnetic tape 5 on which a recording signal AS was recorded for ten hours from moment T1 up to moment T12 in the longplay recording mode. The recording medium start moment T1 corresponds to the actual time 13:00 at the start of the recording of the programs S1. The moments T1 to T11 correspond to the starting moments of the programs S1 to S11 listed in the program magazine 34. For example, an input signal ES of the program S5 entitled "Universe" broadcast at 15:35 hours by the station ORF1 was recorded on the magnetic tape 5 from the recording medium position P5 up to a recording medium position P6 as a recorded signal AS. The moment T5 corresponds to the starting time 15:35 of the program S5 "Universe" listed in the program magazine 34.

Immediately after the longplay recording mode had been activated, the control unit 21 registered the actual time information ZI = 13:00 supplied by the clock component 22 as the starting time information PZI characterizing the recording start moment T1 and the position at the start of the magnetic tape 5 as the recording medium start position P1 for this recording. Furthermore, the actual date information DI = 12.08.98 supplied by the clock component 22 was registered as the recording date information ADI for this recording, as well as the broadcasting station identifier information SKI determined by the signal processing means 19 from the input signal ES. This starting time information BZI, this recording date information ADI, and this broadcasting station identifier information SKI were recorded in the linear recording track of the magnetic tape 5 in accordance with the VASS standard throughout the entire recording session of ten hours.

It is furthermore assumed for this first example that the video cassette containing the magnetic tape 5 was taken from the video recorder 1 after the broadcasts S1 to S11 had been recorded and is inserted in the video recorder 1 once more, for example after three days, on 15 August 1998. The video recorder 1 is furthermore constructed for carrying

out an initializing routine – in a manner not shown in any detail in Fig. 1 – immediately after a video cassette has been inserted. In this initializing routine, a playback mode of the video recorder 1 is activated for a short time, for example for five seconds, so as to reproduce information in accordance with the VASS standard recorded in the linear recording track of the magnetic tape 5 and to show this on the display 24. During the initializing routine, furthermore, the actual playback time period WD and the actual recording medium position AP are determined by the tape length counter 26, as was explained above.

It is assumed for the first example that the actual playback time period WD1 = 01:15 and the actual recording medium position AP1 were determined by the tape length counter 26. The information shown on the display 24 after the initializing routine enables the user of the video recorder 1 to recognize that broadcasts S of the station ORF1 of 12 August 1998 starting from 13:00 hours have been recorded on the magnetic tape 5 of the video cassette inserted into the video recorder 1. The user of the video recorder 1 now has the possibility of selecting a broadcast S in which he/she is interested from the program magazine 34 shown in Fig. 2.

It is now further assumed for this first example that the user of the video recorder 1 would like to view the program S7 with the title "Titanic". Advantageously, the user of the video recorder 1 must for this purpose only enter the starting time 17:00 hours indicated for the program "Titanic", which forms a desired playback moment GT1 here, as the playback time information WZI by means of the playback moment button 33. The control unit 21 is designed for subtracting the starting time information BZI = 13:00 characterizing the recording start moment T1 from the recording time information WZI = 17:00 characterizing the desired playback moment GT1 so as to determine a programmed time period VD1 = 4:00. A comparison of the actual playback time period WD1 = 1:15 determined by the tape length counter 26 with the programmed time period VD1 = 4:00 determined above enables the control unit 21 to decide that the magnetic tape 5 is to be driven in a direction towards the end of the magnetic tape 5 in order to position the magnet heads 7 and 8 in the desired recording medium position GP1. The control unit 21 thereupon issues the relevant motor control information MSI to the motor 16. The magnetic tape 5 is then transported towards the end of the magnetic tape 5 with a speed which is a multiple of the playback speed. When the control unit 21 detects that the actual playback time period WD, which is continuously being monitored by the tape length counter 26 during the driven movement of the magnetic tape 5, corresponds to the programmed time period VD1 = 4:00, which is the case when the desired

recording medium position GP1 is reached, the control unit will activate the longplay playback mode in the video recorder 1 so as to show the recorded program "Titanic".

Advantageously, the magnet heads 7 and 8 were thus positioned in a desired recording medium position GP1 chosen at will by the user of the video recorder 1, and the selected program S7 was subsequently displayed. All the user of the video recorder 1 had to do for this was enter the starting time of the selected program S7 indicated in the program magazine 34, without having to take into account the present recording medium position AP1 of the magnetic tape 5.

Advantageously, moreover, the starting time information BZI was determined from the reproduced recording signal with this first embodiment of the video recorder 1, so that the user of the video recorder 1 need not enter the starting time information BZI.

Particularly advantageous is furthermore the use of the linear recording track of the magnetic tape 5 as a storage means for storing a starting time information BZI and other information, with the result that separate memory means are not necessary in the video recorder 1. An additional advantage here is that the cassette containing the magnetic tape 5 can also be inserted in another video recorder according to the invention, and the information recorded in the linear recording track can also be used in the other video recorder for positioning the magnet heads thereof into a desired recording medium position GP.

It is particularly advantageous to record the information mentioned above in the linear recording track of the magnetic tape in accordance with the VASS standard, because the data rate which can be recorded in the linear recording track here is sufficiently high and substantially no additional hardware is necessary in the video recorder 1.

It is to be noted that it is advantageous in a digital video recorder, which records signals in accordance with the DVHS standard and in which the measures of claim 1 have been taken, to record the information mentioned above in a sub-code of the recorded signal.

Advantageously, the video recorder 1 always lays down the recording medium start position P1 at the beginning of the magnetic tape 5 so that the recording medium start position P1 need not be stored in the video recorder 1, neither need it be put in by a user of the video recorder 1. In addition, this laying-down renders it possible to record programs over the entire magnetic tape 5.

It may be noted, however, that any recording medium start positions desired are possible, and thus also several recording medium start positions are possible in the case of several recordings on one magnetic tape. In this case it is possible through the input of a playback time information and a recording date information to characterize unequivocally a

recording medium position, and the magnet heads can be positioned into this recording medium position. For example, the video recorder could be set for a daily recording of signals from 20:15 to 22:15 hours and, upon reaching the end of the magnetic tape, for rewinding to the start of the magnetic tape and for recording again, overwriting the previous signals. A recorded program would then be playable by the video recorder through an input of the playback time information $WZI = 20:15$ and the recording date ADI corresponding to the desired broadcast.

It is to be noted that the measures according to the invention may be provided to particular advantage in a so-called Time Lapse Recorder, which is designed for the recording of single pictures during a very long recording time.

It may be noted that the user of the video recorder 1 in accordance with the first example could also have entered the show view code "17845 of the broadcast S7 with the title "Titanic" as a numerical code information. The control unit 21 would then have derived from the entered show view code the playback time information $WZI = 17:00$, and would have transported the magnetic tape 5 to the desired recording medium position GP1.

It is to be noted that the video recorder 1 may be designed for comparing a date information DI present in the show view code, which characterizes the date of the recording of the signal AS, with a recording date information ADI of the recording determined during the initializing routine, in the case in which a desired playback time information was entered in the form of a show view code, and that it may be possible to show an information on the display of the video recorder 1 if the two date informations do not correspond.

In a second example, the user of the video recorder 1 notices after viewing part of the broadcast S7 at an actual recording medium position AP2 that he would rather see the broadcast S11 entitled "East of Eden". Since he has only one hour the time and has already seen the beginning of this broadcast S11 once before, the user decides to view the final hour of the broadcast S11. The user recognizes from the program magazine 34 that the broadcast S11 terminated on 12 August 1998 at 23:00 hours and that accordingly he would like to see the part of the broadcast S11 which was broadcast from 22:00 to 23:00 hours on that date.

Advantageously, the user of the video recorder 1 must for this purpose now enter "22:00" as the playback time information WXI which characterizes the desired playback moment GT2 by means of the playback moment button 33. The control unit 21 is constructed for deriving a programmed time period $VD2 = WZI - T1 = 22:00 - 13:00 = 9:00$, as was explained above. The control unit 21 compares the actual playback time period $WD2 = 5:00$ determined by the tape length counter 26 with the determined programmed time period $VD2 =$

9:00 and determines therefrom that the magnetic tape is to be transported towards the end of the magnetic tape 5, and positions the magnetic heads 7 and 8 in the desired recording medium position GP2 as explained above. Subsequently, the control unit 21 activates the longplay playback mode in the video recorder 1 so as to show the final part of the program "East of Eden".

As was explained with reference to the second example, the user of the video recorder 1 can achieve a positioning of the magnet heads 7 and 8 of the video recorder 1 in any recording medium position P desired of the magnetic tape 5 as well as a subsequent playback starting from this recording medium position P through a simple entering of a playback time information WZI.

It is to be noted that the playback device may also be formed by a DVD player in which an optical playback head is positioned into a desired recording medium position of an optical data carrier.

It is to be noted that the input means may alternatively comprise buttons on the housing of the video recorder 1 instead of the remote control device 29.

It is to be noted that input means for entering a numerical code information may be formed by a bar code reader which is constructed for reading a bar code printed in a program magazine for each broadcast.

It is to be noted that a playback device as claimed in claim 1 may alternatively be formed by an audio recorder for recording and playing audio information on a magnetic tape or a rotatably journaled disc as the data carrier.

CLAIMS:

1. A device (1) with playback means (6) for reproducing a recorded signal (AS) recorded on a recording medium (5) starting from a recording medium starting position (P1) of the recording medium (5) and starting from a recording start moment (T1) by means of at least one playback head (7, 8) and positioning means (27) for positioning said at least one playback head (7, 8) into a desired recording medium position (GP1, GP2) for reproducing a recorded signal (AS) starting from this recording medium position (G1, G2),
5 characterized in that

input means (4) are provided for supplying a playback time information (WZI) which characterizes a desired playback moment (GT1, GT2), said desired playback moment (GT1, GT2) corresponding to the sum of a starting time information (BZI) characterizing the recording start moment (T1) and a recording time duration (VD1, VD2) which has already elapsed in the recording of the recording signal (AS) in the desired recording medium position (GP1, GP2) of the recording medium (5), and in that
10 the positioning means (27) are designed for subtracting the starting time information (BZI) from the supplied playback time information (WZI) when determining the desired recording medium position (GP1, GP2).
15

2. A device (1) as claimed in claim 1, characterized in that detection means (25) are provided for detecting a starting time information (BZI) contained in a reproduced recorded signal (WAS).
20

3. A device (1) as claimed in claim 1, characterized in that reception means (4) are provided for receiving a reception signal (ES), and in that recording means (6) are provided for recording a reception signal (ES) as a recording signal (AS) on a recording medium (5),
25 and in that memory means are provided for storing a starting time information (BZI).

4. A device (1) as claimed in claim 3, characterized in that the recording means (6) are designed for recording a starting time information (BZI) in accordance with the VASS standard on a magnetic tape (5), which thus forms memory means.

5. A device (1) as claimed in claim 3, characterized in that the recording means (6) are designed for recording a starting time information (BZI) in a sub-code in accordance with the DVHS standard on a magnetic tape (5), which thus forms memory means.

5

6. A device (1) as claimed in claim 3, characterized in that the memory means are designed for storing a recording date information (ADI) which characterizes the date on which a recording signal (AS) was recorded.

10

7. A device (1) as claimed in claim 3, characterized in that the memory means are designed for storing a broadcasting station identifier information (SKI) which characterizes a broadcasting station whose reception signal (ES) the recording means (6) are capable of recording.

15

8. A device (1) as claimed in claim 3, characterized in that the recording means (6) are designed for registering the recording medium start position (P1) at the beginning of the recording medium (5) and for recording a recording signal (AS) from the beginning up to the end of the recording medium (5).

20

9. A device (1) as claimed in claim 1, characterized in that the input means (4) are designed for deriving a desired playback moment (GT1, GT2) from a numerical code information put in.

25

10. A device (1) as claimed in claim 1, characterized in that the input means (4) are designed for entering a recording date information (ADI) which characterizes the recording date of a recorded signal (AS) of a desired playback moment (GT1, GT2).

ABSTRACT:

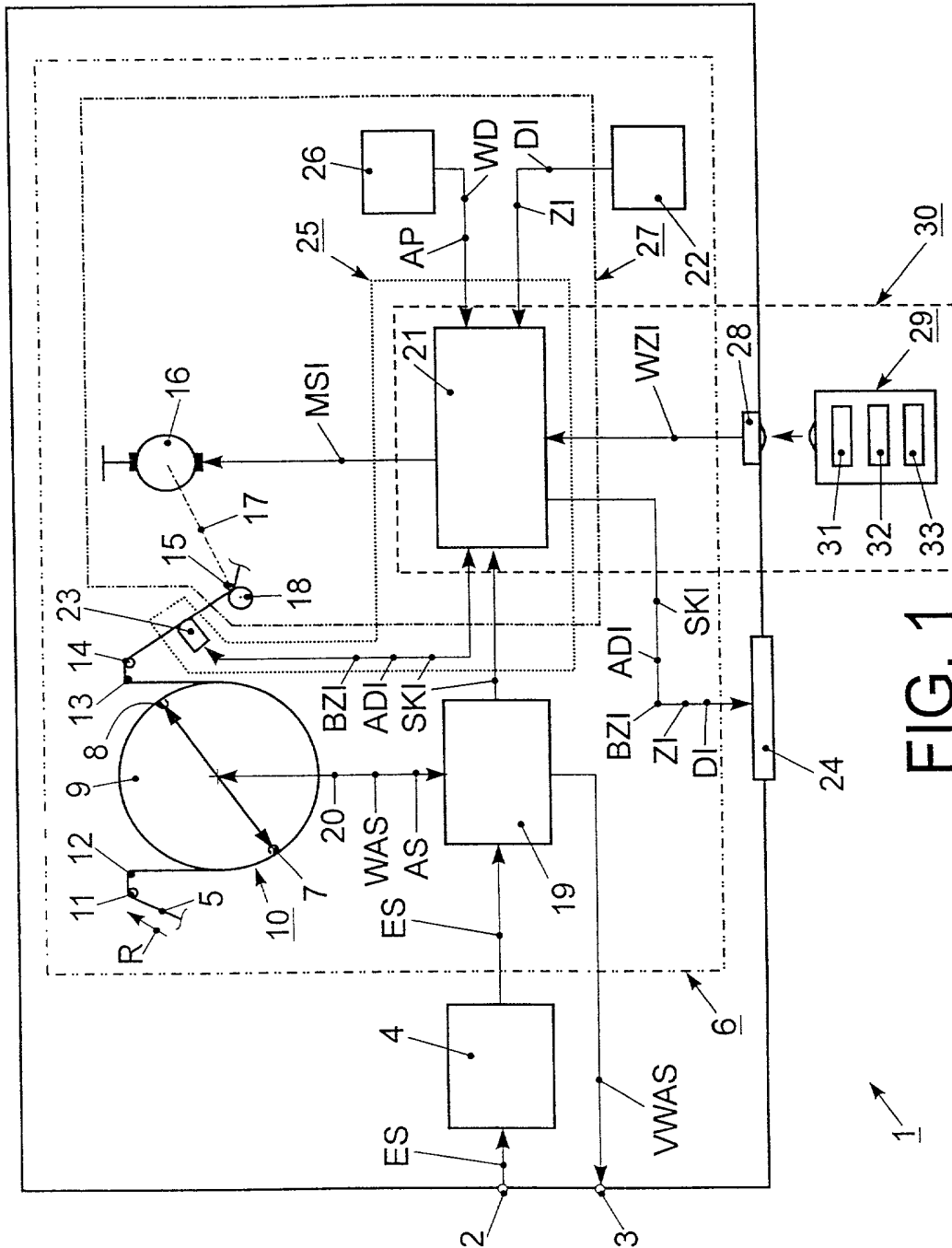
A device (1) with playback means (6) for reproducing a recorded signal (AS) recorded on a recording medium (5) starting from a recording medium start position (P1) of the recording medium (5) and starting from a recording start time (T1) by means of at least one playback head (7, 8), and with positioning means (27) for positioning said at least one playback head (7, 8) into a desired recording medium position (GP1, GP2) for the reproduction of a recorded signal (AS) starting from said recording medium position (GP1, GP2), also comprises input means (30) for entering a playback time information (WZI) which characterizes a desired playback moment (GT1, GT2), said desired playback moment (GT1, GT2) corresponding to the sum of a starting time information (BZI) characterizing the recording start moment (T1) and a recording time period (VD1, VD2) which has already elapsed in the recording of the recording signal (AS) in the desired recording medium position (GT1, GT2) of the recording medium (5), while the positioning means (27) are designed for subtracting the starting time information (BZI) from the playback time information (WZI) put in for determining the desired recording medium position (GP1, GP2).

(Fig. 1)

Program Magazine**12th August 1998 ORF1**

5		12:30	17345	Side Glances
	(S1)	13:00	27067	News
	(S2)	13:20	347702	Casablanca
	(S3)	15:20	77899	Commercials
10	(S4)	15:25	4578199	Sport
	(S5)	15:35	1132526	Universe
	(S6)	16:35	3526199	Alf
	(S7)	17:00	17845	Titanic
	(s8)	19:25	1146783	Commercials
15	(S9)	19:30	563899	Time Image
	(S10)	20:00	563876	Sport
	(S11)	20:15	186847	East of Eden
		23:00	14235	Holiday with a Difference
	
20				

Fig. 2



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34 →

	PROGRAMMZEITUNG		12.Aug.98
			ORF1
	12:30	17345	Seitenblicke
(S1)	13:00	27067	Nachrichten
(S2)	13:20	347702	Casablanca
(S3)	15:20	77899	Werbung
(S4)	15:25	4578199	Sport
(S5)	15:35	1132526	Universum
(S6)	16:35	3526199	Alf
(S7)	17:00	17845	Titanic
(S8)	19:25	1146783	Werbung
(S9)	19:30	563899	Zeit im Bild I
(S10)	20:00	563876	Sport
(S11)	20:15	186847	Jenseits von Eden
	23:00	14235	Urlaub einmal anders

FIG.2

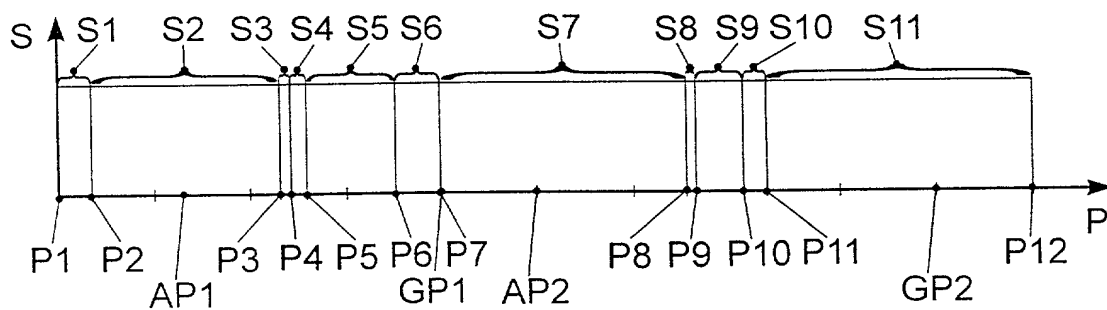


FIG.3

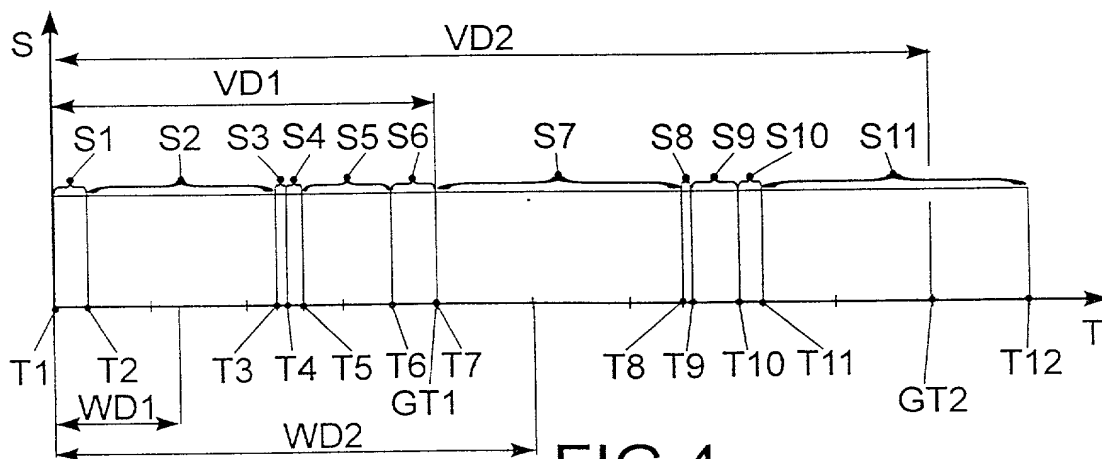


FIG.4

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(includes Reference to PCT International Applications)

ATTORNEY'S DOCKET
NUMBER
PHO 98.533 US

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: "Device for the playback of a recorded signal with positioning means"

the specification of which (check only one item below):

☐ is attached hereto.

☐ was filed as United States application

Serial No. _____

on _____

and was amended _____

on _____

☒ was filed as PCT international application

Number PCT/EP99/05521

on 29 July 1999 (29.07.99)

and was amended under PCT Article 19 _____

on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY	APPLICATION NUMBER	DATE OF FILING DAY, MONTH, YEAR	PRIORITY CLAIMED UNDER 35 USC 119
Europe	98890224.3	04 August 1998	YES

U.S. DEPARTMENT OF COMMERCE -Patent and Trademarks Office
(July 1994)

426 Rec'd PCT/PTO 03 APR 2000

Combined Declaration For Patent Application and Power of Attorney (Continued)
(includes Reference to PCT International Applications)Attorneys Docket Number
PHO 98.533 US

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number)

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	POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE/COUNTRY

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201

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SIGNATURE OF INVENTOR 203

DATE **March 1, 2000**

DATE

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